

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of)	
)	
Advanced Television Systems	)	MB Dkt. No. 87-268
and Their Impact upon the)	
Existing Television Broadcast)	
Service)	
)	
Revisions to the Proposed New	)	DA 07-20
DTV Table of Allotments)	

To: Office of the Secretary

**COMMENTS OF STATE OF WISCONSIN –
EDUCATIONAL COMMUNICATIONS BOARD**

The State of Wisconsin – Educational Communications Board (“ECB”), by its counsel, comments on the FCC’s January 8, 2007 Public Notice, DA 07-20, “Revisions to Proposed New DTV Table of Allotments” (“*Public Notice*”), which announced new tentative channel designations to be added to the DTV Table of Allotments proposed by the Seventh Further Notice of Proposed Rulemaking, FCC 06-150, released October 20, 2006 in MB Docket No. 87-268. The *Public Notice* included a tentative channel designation of post-transition DTV Channel 27 for Duluth, Minnesota.

ECB is the licensee of noncommercial educational digital television station WHWC-DT, DTV Channel 27, Menomonie, Wisconsin. ECB respectfully submits that the public interest would be better served by allotment of DTV Channel 47 at Duluth, rather than DTV Channel 27. DTV Channel 47 at Duluth is not only available, but it would also cause a substantially smaller amount interference to existing and proposed stations.

As detailed in the attached Engineering Statement and exhibits, operation under the proposed allotment of DTV Channel 27 at Duluth (at the technical parameters set forth in Appendix B to the *Public Notice*) would cause interference to WHWC-DT for 10,995 persons, or 1.290 % of its noise limited service area.¹

However, an alternate DTV Channel 47 allotment in Duluth would cause considerably less interference. As the Engineering Statement explains, Channel 47 with the same antenna radiation center height above average terrain and power, and a non-directional antenna, would cause no interference to other stations. Moreover, a change from Channel 27 to Channel 47 would greatly decrease the interference received by the new DTV allotment at Duluth. Whereas the proposed Channel 27 allotment would receive interference to 1,161 persons (or 0.54 % of the noise limited population), a Channel 47 allotment would receive interference to only 15 persons (or 0.007 % of the served population). *See* attached.

For the above reasons, and those set forth in the attached technical statement, ECB respectfully submits that the proposed DTV Channel 27 allotment for Duluth should be replaced by a DTV Channel 47 allotment that would better serve the public interest. Operation on DTV Channel 47 would not only substantially decrease interference to ECB's WHWC-DT, but would also result in a marked decrease in interference to the new Duluth DTV station. The more than 12,000 persons that would be rendered interference-free by switching the proposal to DTV Channel to 47 represents a sizable figure in the sparsely populated area at issue, that of Northwestern Wisconsin. According to the 2000 U.S. Census, Station WHWC-DT's city of license of Menomonie has a total population of only 14,937. ECB therefore respectfully requests that the proposed Duluth addition to the DTV Table of Allotments specify Channel 47.

¹ This includes new interference from Duluth Ch. 27 of 0.345 % of the population served. *See* attached.

Respectfully submitted,

STATE OF WISCONSIN – EDUCATIONAL
COMMUNICATIONS BOARD

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February 8, 2007

Engineering Statement

The following engineering statement and attached exhibits have been prepared for the **State of Wisconsin – Educational Communications Board**, licensee of WHWC-TV and WHWC-DT at Menomonie, Wisconsin, and contain the results of a study of a proposed DTV allocation at Duluth, MN.

In “**Tentative Channel Designations To Be Added to the DTV Table of Allotments Proposed in the *Seventh Further Notice of Proposed Rule Making* in MB Docket No. 87-268**” the Commission has proposed the allocation of channel 27 for DTV use in Duluth, MN. The allocation would operate at the same coordinates as the construction permit recently issued to George S. Flinn III (File No. BNPCT-20060421 ABZ, facility ID 166511). The proposed HAAT is also as shown on the construction permit and the effective radiated power is specified at 50 kw with a directional antenna pattern that is different than the construction permit antenna.

As shown in the attached exhibits, the proposed allocation can be made in accordance with the Commission’s policy regarding interference to other stations. Interference would be caused to WHWC-DT for a total population of 10,995 or 1.290% of the noise limited service area. Part of that interference area would also receive interference from KRWF-DT resulting in a new interference from the Duluth allocation of 0.345% of the population served. While the proposed allocation of channel 27 does comply with Commission policy, an alternative allocation is available that would not cause any interference to any other station, election or class A LPTV.

As an alternative allocation, it is proposed that channel 47 be assigned to Duluth for the channel 27 analog station. The attached exhibits demonstrate that such a facility could operate with the HAAT and power contained in the tentative allocation with a non-directional antenna. There would be no interference involved. It is respectfully submitted that an allocation which would not cause any interference at all to any other protected service is preferable to one which would cause some interference. This is particularly true when the interference would occur over a large, thinly populated area such as Northern Wisconsin where television service is limited. The public interest is not served by an allocation that would cause any interference if one is available that would be interference free.

The attached exhibits also demonstrate that the proposed channel 27 allocation would receive interference to 1161 or 0.54% of the noise limited population. However, changing the allocation to channel 47 would decrease that interference to a total of 15 or 0.007% of the served population. Again, regardless of policy, it is apparent that over 12,000 viewers would receive interference free service from either WHWC-DT or the new facility at Duluth if the allocation were to be changed from channel 27 to channel 47.

In summary, the public interest would be better served if the proposed DTV allocation at Duluth coupled with analog 27 were to be changed from channel 27 to channel 47. While the numbers are not huge if the audiences were in metropolitan areas, in the sparsely populated rural area of Wisconsin, 12,000 additional interference free

viewers is a significant number. Therefore, it is respectfully requested that the proposed Duluth allocation be changed to channel 47.

/s/ Donald L. Markley
Donald L. Markley, P.E.

Dated: January 31, 2007

Interference to WHWC-DT from all other stations without the
new DTV allocation on Ch. 27 at Duluth, MN

WHWC-D (27) Menomonie, WI - BLEDT20040824AAF
Broadcast Type: Digital Service: T
Lat: 45-02-49 N Lng: 091-51-47 W ERP: 291.0 kW AMSL: 655.2 m
TV Incoming Interference Study
Interference Considered Within: Noise Limited FCC Contour
Signal Resolution: 1.25 km
LR Profile Spacing Increment: 0.1 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
of radials computed for contours: 360
Contours calculated using 8 radial HAAT.
Threshold for reception: 40.0455
Pop Centroid DB: 1990 US Census

Study Date: 1-29-2007
TV Database Date: 01-19-07

Primary Terrain: V-Soft 3 Second US Terrain
Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 849,527.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
KFXA-D (27)	41	127	0.015	17.77
KMSP-D (26)	101709	270614	31.855	1421.09
NEW.C (27-)	3406	8418	0.991	193.00
KRWF-D.C (27)	29332	77759	9.153	262.93
WKOWTV (27+)	136	323	0.038	51.89

Masking Summary:

Call Letters	Total Interference		Unique Interference	
	Population	%	Population	%
KFXA-D (27)	127	0.015	19	0.002
KMSP-D (26)	270614	31.855	193121	22.733
NEW.C (27-)	8418	0.991	1205	0.142
KRWF-D.C (27)	77759	9.153	648	0.076
WKOWTV (27+)	323	0.038	164	0.019

Stations considered which do not cause interference:

WACY-D.P (27)
WACY-D.C (27)
WHWCTV (28-)

Call Letters	City	State	Dist	Bear
KFXA-D (27)	Cedar Rapids	IA	329.0	183.2
KMSP-D (26)	Minneapolis/st. Pau	MN	99.4	271.2
NEW.C (27-)	Duluth	MN	194.5	354.2
KRWF-D.C (27)	Redwood Falls	MN	293.9	259.0
WACY-D.P (27)	Appleton	WI	317.1	102.6
WACY-D.C (27)	Appleton	WI	317.1	102.6
WKOWTV (27+)	Madison	WI	289.4	139.0
WHWCTV (28-)	Menomonie	WI	0.0	0.0

Totals for WHWC-D (27)

Calculation Area Population:	881,463	(	27062.2 sq. km)
Not Affected by Terrain Loss:	849,527	(	26362.6 sq. km)
Total NTSC Interference:	8,695	(	238.0 sq. km)
DTV Only Interference:	264,398	(	1428.0 sq. km)
Total DTV Interference:	271,678	(	1500.6 sq. km)
Interfered Population:	273,093	(	1666.1 sq. km)
Interference Free:	576,434	(	24696.6 sq. km)

Percent Interference: 32.15

Terrain Blocked Population:	31,936	(	699.6 sq. km)
Contour Area Population:	880,737		

Interference Free Breakdown:

White:	543,646	(	94.3%)
Black:	6,259	(	1.1%)
Hispanic:	7,979	(	1.4%)
Native American:	3,098	(	0.5%)
Asian:	9,937	(	1.7%)
Pacific Islander:	135	(	0.0%)
Mixed Race:	5,047	(	0.9%)
Other:	333	(	0.1%)
Total:	576,434		

Interference to WHWC-DT from all other stations or elections
with the proposed DTV allocation for Duluth on Ch. 27

WHWC-D (27) Menomonie, WI - BLEDT20040824AAF
Broadcast Type: Digital Service: T
Lat: 45-02-49 N Lng: 091-51-47 W ERP: 291.0 kW AMSL: 655.2 m
TV Incoming Interference Study
Interference Considered Within: Noise Limited FCC Contour
Signal Resolution: 1.25 km
LR Profile Spacing Increment: 0.1 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
of radials computed for contours: 360
Contours calculated using 8 radial HAAT.
Threshold for reception: 40.0455
Pop Centroid DB: 1990 US Census

Study Date: 1-29-2007
TV Database Date: 01-19-07

Primary Terrain: V-Soft 3 Second US Terrain
Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 849,527.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
KFXA-D (27)	41	127	0.015	17.77
NEW.C (27-)	3406	8418	0.991	193.00
KRWF-D.C (27)	29332	77759	9.153	262.93
WKOWTV (27+)	136	323	0.038	51.89
Duluth DT (27)	4803	10955	1.290	453.10

Masking Summary:

Call Letters	Total Interference		Unique Interference	
	Population	%	Population	%
KFXA-D (27)	127	0.015	19	0.002
NEW.C (27-)	8418	0.991	361	0.042
KRWF-D.C (27)	77759	9.153	71224	8.384
WKOWTV (27+)	323	0.038	164	0.019
Duluth DT (27)	10955	1.290	2927	0.345

Stations considered which do not cause interference:

WACY-D.P (27)
WACY-D.C (27)
WHWCTV (28-)

Stations which were not considered:

KMSP-D (26)as station has elected to change DTV allocation to Ch. 9

Call Letters	City	State	Dist	Bear
KFXA-D (27)	Cedar Rapids	IA	329.0	183.2
KMSP-D (26)	Minneapolis/st. Pau	MN	99.4	271.2
NEW.C (27-)	Duluth	MN	194.5	354.2
KRWF-D.C (27)	Redwood Falls	MN	293.9	259.0
WACY-D.P (27)	Appleton	WI	317.1	102.6
WACY-D.C (27)	Appleton	WI	317.1	102.6
WKOWTV (27+)	Madison	WI	289.4	139.0
WHWCTV (28-)	Menomonie	WI	0.0	0.0
Duluth DT (27)	Unknown	??	194.5	354.2

Totals for WHWC-D (27)

Calculation Area Population:	881,463	(	27062.2 sq. km)
Not Affected by Terrain Loss:	849,527	(	26362.6 sq. km)
Total NTSC Interference:	8,695	(	238.0 sq. km)
DTV Only Interference:	74,204	(	469.6 sq. km)
Total DTV Interference:	82,374	(	665.4 sq. km)
Interfered Population:	82,899	(	707.6 sq. km)
Interference Free:	766,628	(	25655.0 sq. km)

Percent Interference: 9.76

Terrain Blocked Population:	31,936	(	699.6 sq. km)
Contour Area Population:	880,737		

Interference Free Breakdown:

White:	721,372	(	94.1%)
Black:	8,769	(	1.1%)
Hispanic:	11,242	(	1.5%)
Native American:	3,682	(	0.5%)
Asian:	13,953	(	1.8%)
Pacific Islander:	193	(	0.0%)
Mixed Race:	6,939	(	0.9%)
Other:	478	(	0.1%)
Total:	766,628		

Outgoing Interference from proposed channel 47 for
DTV use in Duluth, MN

Duluth DTV (47) Duluth, ??

Broadcast Type: Digital Service: V

Lat: 46-47-15 N Lng: 092-07-21 W ERP: 50.0 kW AMSL: 579.62 m

TV Outgoing Interference Study

Signal Resolution: 1.25 km

Consider NTSC Taboo: Yes

KWX error points are considered to
be interference free coverage.

of radials computed for contours: 72

Contours calculated using 8 radial HAAT.

LR Profile Spacing Increment: 0.1 km

Masked interference points are being counted
as interference free.

Pop Centroid DB: 1990 US Census

Study Date: 1-30-2007

TV Database Date: 01-19-07

Primary Terrain: V-Soft 3 Second US Terrain

Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Stations Considered:

Call Letters	City	State	Dist	Bear
KXLTTV (47-)	Rochester	MN	350.9	185.3
WLEF-D (47)	Park Falls	WI	170.3	122.7

Call	Area	HUnits	Contour	Masked Ix	Unmasked Ix	%
KXLTTV (47-)	0.0	0	255,913	0	0	0.0
WLEF-D (47)	465.4	696	100,220	66	997	1.0

There would be no interference from WLEF-DT in Park Falls as the licensee has elected to use the analog channel 36. Therefore, there would be no interference from a DTV station on channel 47 to any other full service station, channel election or Class A LPTV station.

Interference received by proposed channel 27 allocation
at Duluth

NEW.C (27-) Duluth, MN - BNPCT20060421ABZ
Broadcast Type: Digital Service: V
Lat: 46-47-15 N Lng: 092-07-21 W ERP: 50.0 kW AMSL: 579.0 m
TV Incoming Interference Study
Interference Considered Within: Noise Limited FCC Contour
Signal Resolution: 1.25 km
LR Profile Spacing Increment: 0.1 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
of radials computed for contours: 360
Contours calculated using 8 radial HAAT.
Threshold for reception: 40.0376
Pop Centroid DB: 1990 US Census

Study Date: 1-31-2007
TV Database Date: 01-19-07

Primary Terrain: V-Soft 3 Second US Terrain
Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 214,361.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
WHWC-D (27)	1899	1161	0.542	902.88

Masking Summary:

Call Letters	Total Interference Population	%	Unique Interference Population	%
WHWC-D (27)	1161	0.542	1161	0.542

Stations considered which do not cause interference:

KRWF-D.C (27)

Call Letters	City	State	Dist	Bear
KRWF-D.C (27)	Redwood Falls	MN	366.6	226.9
WHWC-D (27)	Menomonie	WI	194.5	174.0

Totals for NEW.C (27-)

Calculation Area Population: 214,617 (17121.8 sq. km)

Not Affected by Terrain Loss:	214,361	(17016.7 sq. km)
Total NTSC Interference:	0	(0.0 sq. km)
DTV Only Interference:	1,161	(902.9 sq. km)
Total DTV Interference:	1,161	(902.9 sq. km)
Interfered Population:	1,161	(902.9 sq. km)
Interference Free:	213,200	(16113.8 sq. km)

Percent Interference:	0.54
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Terrain Blocked Population:	256	(105.2 sq. km)
Contour Area Population:	214,647	

Interference Free Breakdown:

White:	199,571	(93.6%)
Black:	2,028	(1.0%)
Hispanic:	1,787	(0.8%)
Native American:	5,225	(2.5%)
Asian:	1,502	(0.7%)
Pacific Islander:	55	(0.0%)
Mixed Race:	2,923	(1.4%)
Other:	109	(0.1%)
Total:	213,200	

Interference received by proposed channel 47 allocation
at Duluth

NEW.C (47) Duluth, MN - BNPCT20060421ABZ
Broadcast Type: Digital Service: V
Lat: 46-47-15 N Lng: 092-07-21 W ERP: 50.0 kW AMSL: 579.0 m
TV Incoming Interference Study
Interference Considered Within: Noise Limited FCC Contour
Signal Resolution: 1.25 km
LR Profile Spacing Increment: 0.1 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
of radials computed for contours: 360
Contours calculated using 8 radial HAAT.
Threshold for reception: 41.7569
Pop Centroid DB: 1990 US Census

Study Date: 1-31-2007
TV Database Date: 01-19-07

Primary Terrain: V-Soft 3 Second US Terrain
Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 212,405.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
KXLTTV (47-)	11	15	0.007	14.58

Masking Summary:

Call Letters	Total Interference Population	%	Unique Interference Population	%
KXLTTV (47-)	15	0.007	15	0.007

Stations which were not considered:

WLEF-D (47) as the licensee has elected to remain on Ch. 36

Call Letters	City	State	Dist	Bear
KXLTTV (47-)	Rochester	MN	350.9	185.3
WLEF-D (47)	Park Falls	WI	170.3	122.7

Totals for NEW.C (47)

Calculation Area Population: 212,534 (16125.3 sq. km)

Not Affected by Terrain Loss:	212,405	(16034.7 sq. km)
Total NTSC Interference:	15	(14.6 sq. km)
DTV Only Interference:	0	(-0.0 sq. km)
Total DTV Interference:	0	(0.0 sq. km)
Interfered Population:	15	(14.6 sq. km)
Interference Free:	212,390	(16020.1 sq. km)

Percent Interference:	0.01
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Terrain Blocked Population:	129	(90.7 sq. km)
Contour Area Population:	212,610	

Interference Free Breakdown:

White:	198,780	(93.6%)
Black:	2,028	(1.0%)
Hispanic:	1,774	(0.8%)
Native American:	5,211	(2.5%)
Asian:	1,498	(0.7%)
Pacific Islander:	53	(0.0%)
Mixed Race:	2,934	(1.4%)
Other:	112	(0.1%)
Total:	212,390	

Interference to WHWC-DT from all other station or elections
without the proposed DTV allocation for Duluty on Ch. 27

WHWC-D (27) Menomonie, WI - BLEDT20040824AAF
Broadcast Type: Digital Service: T
Lat: 45-02-49 N Lng: 091-51-47 W ERP: 291.0 kW AMSL: 655.2 m
TV Incoming Interference Study
Interference Considered Within: Noise Limited FCC Contour
Signal Resolution: 1.25 km
LR Profile Spacing Increment: 0.1 km
Consider NTSC Taboo: Yes
KWX error points are considered to
be interference free coverage.
of radials computed for contours: 360
Contours calculated using 8 radial HAAT.
Threshold for reception: 40.0455
Pop Centroid DB: 1990 US Census

Study Date: 1-29-2007
TV Database Date: 01-19-07

Primary Terrain: V-Soft 3 Second US Terrain
Secondary Terrain: V-Soft 30 Second US Database

Population Database: 2000 US Census (SF1)

Percentages calculated using a baseline population of 849,527.

Stations which cause interference:

Call Letters	H Units	Population	%	Area (sq. km)
KFXA-D (27)	41	127	0.015	17.77
NEW.C (27-)	3406	8418	0.991	193.00
KRWF-D.C (27)	29332	77759	9.153	262.93
WKOWTV (27+)	136	323	0.038	51.89

Masking Summary:

Call Letters	Total Interference Population	%	Unique Interference Population	%
KFXA-D (27)	127	0.015	19	0.002
NEW.C (27-)	8418	0.991	1936	0.228
KRWF-D.C (27)	77759	9.153	71242	8.386
WKOWTV (27+)	323	0.038	164	0.019

Stations considered which do not cause interference:

WACY-D.P (27)
WACY-D.C (27)
WHWCTV (28-)

Stations which were not considered:

KMSP-D (26)as station has elected to change DTV allocation to Ch. 9

Duluth DT (27)

Call Letters	City	State	Dist	Bear
KFXA-D (27)	Cedar Rapids	IA	329.0	183.2
KMSP-D (26)	Minneapolis/st. Pau	MN	99.4	271.2
NEW.C (27-)	Duluth	MN	194.5	354.2
KRWF-D.C (27)	Redwood Falls	MN	293.9	259.0
WACY-D.P (27)	Appleton	WI	317.1	102.6
WACY-D.C (27)	Appleton	WI	317.1	102.6
WKOWTV (27+)	Madison	WI	289.4	139.0
WHWCTV (28-)	Menomonie	WI	0.0	0.0
Duluth DT (27)	Unknown	??	194.5	354.2

Totals for WHWC-D (27)

Calculation Area Population:	881,463	(	27062.2 sq. km)
Not Affected by Terrain Loss:	849,527	(	26362.6 sq. km)
Total NTSC Interference:	8,695	(	238.0 sq. km)
DTV Only Interference:	71,277	(	205.3 sq. km)
Total DTV Interference:	77,826	(	275.2 sq. km)
Interfered Population:	79,972	(	443.4 sq. km)
Interference Free:	769,555	(	25919.2 sq. km)

Percent Interference: 9.41

Terrain Blocked Population:	31,936	(	699.6 sq. km)
Contour Area Population:	880,737		

Interference Free Breakdown:

White:	724,004	(	94.1%)
Black:	8,774	(	1.1%)
Hispanic:	11,262	(	1.5%)
Native American:	3,895	(	0.5%)
Asian:	13,956	(	1.8%)
Pacific Islander:	195	(	0.0%)
Mixed Race:	6,991	(	0.9%)
Other:	478	(	0.1%)
Total:	769,555		

